DOCUMENT RESUME

ED 480 552 EF 006 389

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TITLE	Linking School Facility Conditions to Teacher Satisfaction and Success.
INSTITUTION	National Clearinghouse for Educational Facilities, Washington, DC.
PUB DATE	2003-08-00
NOTE	5p.
AVAILABLE FROM	National Clearinghouse for Educational Facilities, 1090 Vermont Avenue, N.W., Suite 700, Washington, DC 20005-4905. Tel: 888-552-0624 (Toll Free); Tel: 202-289-7800; Web site: http://www.edfacilities.org/pubs.
PUB TYPE	ERIC Publications (071) -- Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Educational Environment; Educational Facilities Design; Elementary Secondary Education; Indoor Air Pollution; *Job Satisfaction; Noise (Sound); *School Buildings; *Teacher Attitudes; Teacher Persistence; *Teaching Conditions; Urban Schools
IDENTIFIERS	District of Columbia

ABSTRACT

School facilities directly affect teaching and learning. Poor conditions make it more difficult for teachers to deliver an adequate education to their students, adversely affect teachers' health, and increase the likelihood that teachers will leave their school. This study documented how teachers in Chicago and Washington, DC rated their working conditions and perceived those conditions affected their job performance and teaching effectiveness. Teachers evaluated their surroundings (e.g., degree of overcrowding, availability and adequacy of specialized facilities, and physiological factors). They reported facing daily problems with their buildings. Significant numbers were dissatisfied with their facilities. Teachers noted the inadequacy or lack science, music, and art classrooms. Significant numbers rated physical education and recreational facilities as not very or not at all adequate. Over 40 percent of teachers considered their classrooms the wrong size for the type of education they delivered. Over 25 percent had taught in non-classroom spaces. About one-third of teachers had little or no teacher workspace. Most teachers reported fair or poor indoor air quality. Significant numbers noted poor thermal comfort, poor lighting, dirty and inoperable windows, and dirty restrooms. Many teachers felt their classrooms and hallways were so noisy that it affected their ability to teach, and many believed that school conditions affected their career decisions. (SM)

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Linking School Facility Conditions to Teacher Satisfaction and Success

National Clearinghouse for Educational Facilities

ED 480 552

Mark Schneider
August 2003

Improving educational performance ranks high on the national agenda, with educators and policymakers focusing on testing, accountability, curriculum reform, teacher quality, school choice, and related concerns. Conspicuously absent has been an examination of how school conditions affect teaching and learning, even though extensive literature exists that links school facilities to the quality of education and to teacher morale and teacher productivity.

This study documents how a large sample of teachers in Chicago and Washington, D.C., rate the working conditions in their schools and how they perceive these conditions affecting their job performance and teaching effectiveness. Teachers were asked to evaluate their surroundings, including the degree of overcrowding, the availability and adequacy of such specialized facilities as science labs and music rooms, and physiological factors, including indoor air quality, thermal comfort, classroom lighting, and noise levels.

Teachers Are Dissatisfied

The teachers surveyed in both cities reported facing daily problems with their buildings. On a graded A-through-F scale, the teachers scored their facilities just above a C, or 2.17. Washington schools scored 1.98; Chicago schools scored 2.50. See Figure 1.

The extent of facility problems is underscored in Figure 2. About one-third of Chicago teachers and more than one-half of Washington teachers were dissatisfied with their facilities. When asked if they thought their facilities were suitable for effective teaching and learning, a significant number—about 20 percent of Chicago teachers and 40 percent of Washington teachers—said no.

Facility Problems and Academic Outcomes

The kinds of facilities problems identified in the study are known to have an effect on academic outcomes. For example, research shows that small schools are important

Fig. 1. School facilities as graded by teachers

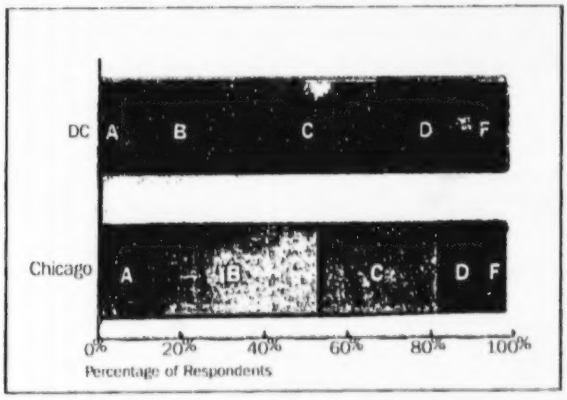
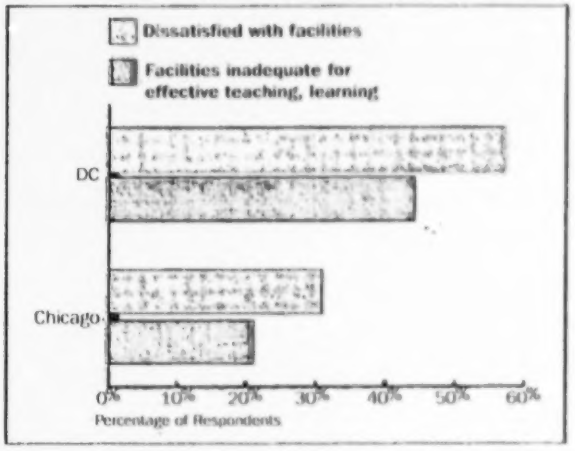


Fig. 2. Teacher dissatisfaction with school facilities



EF 006 389

This publication summarizes findings of a study assessing how school facility conditions in Chicago and Washington, D.C., affect teachers. The study, *Public School Facilities and Teaching: Washington, D.C., and Chicago*, was conducted by Mark Schneider, Professor of Political Science at the State University of New York, Stony Brook. It was commissioned by the 21st Century School Fund as part of its Building Educational Success Together initiative and funded by the Ford Foundation as part of its mission to support educational excellence and equity. The full study can be found at http://www.21csf.org/csf-home/Documents/Teacher_Survey/SCHOOL_FACS_AND_TEACHING.pdf

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for both teachers and students (Schneider 2002), but, as shown in Figure 3-A, about one-quarter of Chicago teachers and almost one-half of Washington teachers thought their school was too large.

Another problem was the inadequacy or lack of science classrooms. Policymakers have long called for better science education in the United States, and many states have enacted more demanding science curriculums. Yet in Chicago and Washington, nearly 60 percent of teachers surveyed reported science labs in their schools as being somewhat or very inadequate, or they reported having no science labs at all.

More than one-third of Chicago teachers and one-half of Washington teachers judged music and art rooms to be somewhat or very inadequate. Physical education and recreational facilities, considered essential to student well-being and achievement, were rated as not very or not at all adequate by almost 30 percent of Chicago teachers and more than 40 percent of Washington teachers.

Asked to comment on other building characteristics important to academic outcomes, teachers again found substantial problems. More than 40 percent reported that their classrooms were the wrong size for the type of education they were trying to deliver, and more than 25 percent reported having taught in non-classroom spaces such as hallways and even closets.

Teaching is a complex task, requiring collaboration, flexibility, and teaming with colleagues. Yet nearly one-third of Chicago teachers and 30 percent of Washington teachers reported that their schools often provided little or no teacher workspace. When workspace was provided, about one-fifth of the teachers in both cities thought it was inadequate.

Facility Problems and Health

There are environmental problems in Chicago and Washington schools that the study found to be exacerbated by poor building design and maintenance, creating situations for many teachers and students that jeopardized not only academic outcomes but also health. Of the conditions most surely linked to health and academic achievement—indoor air quality, thermal comfort, lighting and noise, indoor air quality was of greatest concern. As shown in Figure 3-B, over two-thirds of Washington teachers and more than one-half of Chicago teachers reported fair or poor indoor air quality. Thermal comfort drew negative marks from more than 30 percent of Chicago teachers and more than 40 percent of Washington teachers. Poor lighting, dirty and inoperable windows, and dirty restrooms were other sources of teacher dissatisfaction.

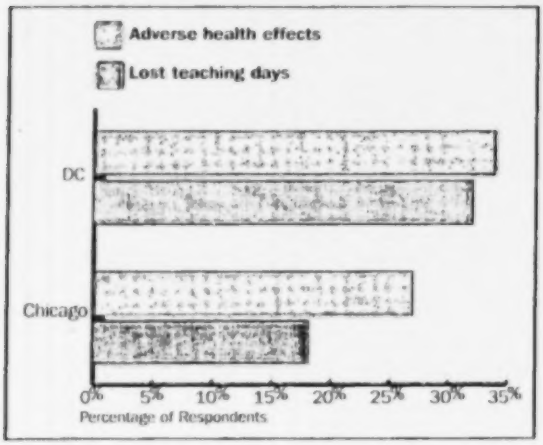
Fig. 3. Facility Problems

Problem Cited	*Percentage of all of teachers who cited the problem in:*	
	Chicago	*Washington*
3-A. Adacemic outcomes		
School too big	46%	23%
Science labs inadequate	56%	64%
Music/art rooms inadequate	39%	50%
Phys ed facilities inadequate	28%	44%
Classroom wrong size	44%	42%
Room is not a classroom	27%	27%
No professional workspace	33%	28%
Professional space inadequate	19%	20%
3-B. Health problems		
Bad indoor air quality	55%	68%
Uncomfortable temperature	32%	42%
Bad lighting	10%	27%
Inoperable windows	19%	39%
Dirty or opaque windows	10%	21%
Dirty restrooms	25%	35%
3-C. Other facility problems		
Too noisy	44%	68%
Insufficient electrical outlets	32%	47%
Dirty lunchrooms	32%	43%

Note: Red listings indicate responses of 40% or greater

More than one-quarter of Chicago teachers and about one-third of Washington teachers reported suffering health problems rooted in poor environmental conditions in their schools. See Figure 4. These problems translated into reduced teacher effectiveness, with almost 20 percent of Chicago teachers and one-third of Washington teachers reporting lost teaching time.

Fig. 4. Poor facilities affect the health and productivity of teachers



In Chicago, teachers were queried about the kinds of health problems they experienced. Not surprisingly, given their complaints about indoor air quality, more than a quarter reported asthma and respiratory problems as the most frequent symptoms. Another 16 percent reported problems that are linked to poor indoor air quality, such as sinus infections.

Other Facility Problems

As seen in Figure 3-C, more than 40 percent of Chicago teachers and nearly 70 percent of Washington teachers reported that their classrooms and hallways were so noisy that it affected their ability to teach; close to 50 percent of Chicago teachers and more than 30 percent of Washington teachers had insufficient electrical outlets in their classrooms; and more than 40 percent of Chicago teachers and 30 percent of Washington teachers found their school's lunchrooms to be inadequate.

Teacher Attrition

As seen in Figures 5 and 6, many teachers reported that conditions in their schools affected their career decisions. Among teachers who graded their facilities with a C or below, more than 40 percent said that poor conditions have led them to consider changing schools and 30 percent are thinking about leaving teaching. The numbers are even higher for teachers who have experienced health effects related to poor facilities: about 50 percent of Chicago teachers and 65 percent of Washington teachers are considering changing schools, and about 40 percent of Chicago and Washington teachers are thinking about leaving the profession entirely.

These decisions are particularly important because many analysts argue that school staffing problems are caused less by the lack of new teachers than by teacher attrition. Indeed, research has shown that approximately one quarter of all beginning teachers leave teaching within four years (Benner 2000).

Fig. 5. Teacher attrition among those who rank their school "C" or lower

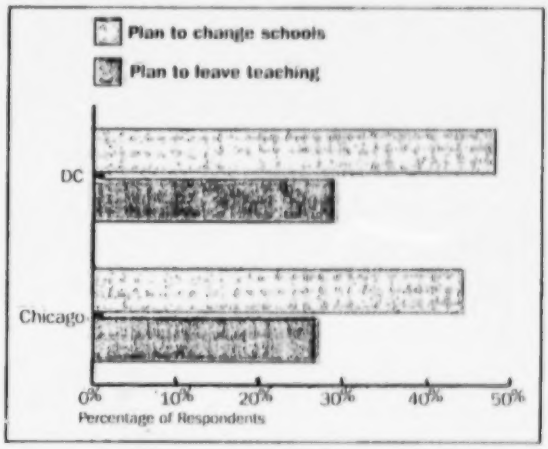
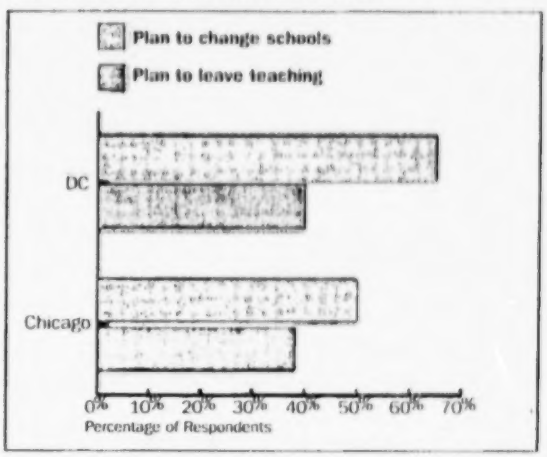


Fig. 6. Teacher attrition among those who have experienced adverse health effects



High teacher turnover forces schools to devote attention, time, and financial resources to attracting replacement teachers. It undermines efforts to implement successful school reform, which requires sustained commitment by school staff. And it affects student learning because new teachers are less effective than experienced ones (Rowan 2002).

Conclusion

School facilities have a direct affect on teaching and learning. Poor school conditions make it more difficult for teachers to deliver an adequate education to their students, adversely affect teachers' health, and increase the likelihood that teachers will leave their school and the teaching profession. Our nation's school facilities are a critical part of the educational process. Their condition and upkeep must be addressed in the ongoing discourse about student achievement, teacher effectiveness, and accountability.

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About the Author

Mark Schneider is professor of political science at the State University of New York, Stony Brook. He has written numerous books and articles on urban and suburban public policy, with a particular focus on education policy. One of his recent publications is *Do School Facilities Affect Academic Outcomes* (Schneider 2002). Schneider's book *Choosing Schools, Consumer Choice and the Quality of American Schools* (Schneider 2000), coauthored with Paul Teske and Melissa Marschall, was recently awarded the Aaron Wildavsky Best Book Award by the Policy Studies Organization.

Additional Information

See the NCEF resource lists *Condition of America's Schools, Facilities Assessment, Healthy School Environments, Impact of Facilities on Learning,* and *Teachers' Workplace* online at *http://www.edfacilities.org/rl/*

Reviewers

Mary Filardo, William Brenner, and Judy Marks

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This publication was sponsored in part by Building Educational Success Together (BEST), a research, constituency building, and communications initiative working to make better urban school facilities a public priority at the national, state, and local levels. BEST's mission is to understand the impact of school facilities on learning and communities and secure the policy changes needed to maximize the benefit of facility improvements for students, teachers, and neighborhoods.

The BEST initiative is led by the 21st Century School Fund (Washington, D.C.). Partners are the Education Law Center (Newark, New Jersey), the KnowledgeWorks Foundation (Cincinnati, Ohio), the National Clearinghouse for Educational Facilities (Washington, D.C.), the Neighborhood Capital Budget Group (Chicago, Illinois), the National Trust for Historic Preservation (Washington, D.C.); and researcher Dr. Mark Schneider (State University of New York at Stony Brook). The Ford Foundation is supporting this collaboration as part of its commitment to public education excellence and equity.

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